

BOSTON EDISON COMPANY
800 BOYLSTON STREET
BOSTON, MASSACHUSETTS 02199

WILLIAM D. HARRINGTON
SENIOR VICE PRESIDENT
NUCLEAR

March 30, 1984
BECO 84-048

Mr. Thomas E. Murley
Regional Administrator
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

License No. DPR-35
Docket No. 50-293

Response to IE Bulletin No. 83-08
Electrical Circuit Breakers With an Undervoltage
Trip Feature in Use in Safety-Related Applications
Other than the Reactor Trip System

Dear Sir:

The subject bulletin transmitted information concerning the use of electrical circuit breakers with undervoltage trip attachments (UVTAs) being used in safety-related applications other than as reactor trip breakers. The bulletin requirements are reproduced below, followed by our responses.

1. Identify applications of W type DB, W type DS, or GE type AK-2 circuit breakers with the UV trip feature as discussed in IE Bulletin 83-01 or 83-04 in safety-related applications at your facility(ies), other than as RTBs. CP holders and licensees should also identify similar applications of other types of breakers by other manufacturers that use a UV trip feature. If such circuit breakers are used or planned for use, identify the system(s) involved.

Response

W type DB, W type DS, and GE type AK-2 circuit breakers with the UV trip feature as discussed in IE Bulletin 83-01 or 83-04 are not used at Pilgrim Station.

BECO has identified six molded case GE type TFJ circuit breakers which have undervoltage trip release devices that are being installed at Pilgrim Station at this time. The application of these circuit breakers will provide isolation between the Non Class 1E Reactor Protection System (RPS) power supply and the downstream Class 1E RPS logic. Two breakers are to be connected in series in each of the three RPS power supplies.

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Mr. Thomas E. Murley
March 30, 1984
Page 2

2. For each circuit breaker type identified in Item 1, do the following:

- a. Review the design of the UVTA and the connecting linkage. Using input from the breaker manufacturer, determine the design margin available to open the breaker. Evaluate whether or not this design margin is adequate in view of safety applications, considering possible problems of alignment, lubrication, adjustment of spring tension, etc., discussed in the "Description of Circumstances".
- b. Describe the current breaker surveillance program, including details of test frequency, methodology, and response time measurement of UVTA device.
- c. Review operating experience with the circuit breakers in your plant(s) identified in Item 1. Provide a list of all malfunctions (both failure to trip and failure to close on demand) associated with the UVTA, including the connecting linkages and latching mechanisms. The list should include the date of each malfunction, and the operating time prior to failure or date of installation, and the date(s) of major maintenance. In general, when the circuit breaker UVTA is actuated on undervoltage and the breaker contacts do not open within the design time response value, the NRC considers the breaker to have failed.
- d. Describe any preventive or corrective measures you have taken, or intend to take, based on the results of Items 2a, 2b, and 2c. Include any revisions to the surveillance test program and methodology. Specifically, address the inherent reliability of the UV trip feature in view of its apparent heavy dependence on intensive maintenance and surveillance and whether a basic design change is warranted to correct the problem, e.g., using a voltage sensitive relay to sense loss of voltage and energize the shunt trip coil from an independent dc power source.

Response

- a. This item is not applicable to the six GE type TFJ circuit breakers identified in Item 1. Molded case circuit breakers such as G.E. type TFJ are enclosed units. The type of periodic maintenance (adjustment, alignment) required on the linkage mechanism of power circuit breakers is not applicable to molded case breakers which are of an enclosed design.
- b. As part of a commitment to NRC/NRR concerning modifications to the power supply for the Pilgrim Station Reactor Protection System, we are currently processing technical specification changes which will include the surveillance information requested for the remaining molded case circuit breakers being installed this outage. We will forward a copy of these proposed Technical Specifications to your office at the time of submittal to NRR.

BOSTON EDISON COMPANY

Mr. Thomas E. Murley

March 30, 1984

Page 3

- c) Two of the six breakers were installed during plant shutdown in October 1982, and these energized breakers have shown no misoperation or troubles associated with the UVTA.
 - d) No preventive or corrective measures are recommended, as there has been limited operating history to justify such actions.
3. For facilities with an OL, submit a written report addressing the above action items, including the schedule for completion, within 90 days of receipt of this bulletin.

Response

By submittal of this letter BECo has fully addressed the requirements of IE Bulletin 83-08 and no further actions will be taken except as discussed above.

4. For facilities holding a CP, submit a written report addressing the above action items, including the schedule for completion, within 90 days of receipt of this bulletin, or before receipt of an operating license, whichever is sooner.

Response

Not applicable.

Should you require any additional information, please contact us.

Very truly yours,

W D Harrington

TFF/kmc

Commonwealth of Massachusetts)
County of Suffolk)

Then personally appeared before me W. D. Harrington, who, being duly sworn, did state that he is Senior Vice President - Nuclear of the Boston Edison Company, the applicant herein, and that he is duly authorized to execute and file the submittal contained herein in the name and on behalf of the Boston Edison Company and that the statements in said submittal are true to the best of his knowledge and belief.

My Commission expires: *October 21, 1988*

Peter M Kahlen
Notary Public

cc: See next page

BOSTON EDISON COMPANY

Mr. Thomas E. Murley
March 30, 1984
Page 4

cc: U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555